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ABSTRACT

High school social studies students (n=160) were each assigned to 1 of 8 groups defined by possible combinations of 2 teacher uncertainty conditions (uncertainty vs. no uncertainty), 2 teacher "bluffing" conditions (bluffing vs. no bluffing), and 2 lecture notes conditions (students receive lecture notes handout vs. students do not receive lecture notes handout). Each group was presented a social studies lesson based on an article in the "Atlantic Monthly." After the lesson, each group was tested on comprehension of the material, and then each group completed a lesson evaluation. Teacher uncertainty significantly reduced achievement, and lecture notes significantly increased achievement. While handouts positively affected achievement, students rated lessons significantly lower on four of the lesson evaluation items when they received lecture notes. One possible explanation for this may be that students preferred a different format for their notes, such as full notes or personal notes. (Author/JD)

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Effect of Teacher Vagueness and Use of Lecture Notes on Student Performance

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Abstract

High school social studies students (n=160) were each assigned to one of eight groups defined by possible combinations of two teacher uncertainty conditions (uncertainty vs. no uncertainty), two teacher "bluffing" conditions (bluffing vs. no bluffing), and two lecture notes conditions (students receive lecture notes handout vs. students do not receive lecture notes handout). Each group was presented a social studies lesson based on an article in the Atlantic Monthly. After the lesson, each group was tested on comprehension of the material, and then each group completed a lesson evaluation. Teacher uncertainty significantly reduced achievement, and lecture notes significantly increased achievement. Several significant results concerning student evaluation of the lesson also were obtained. These findings are discussed in relation to previous research on teacher vagueness and use of lecture notes.

Effect of Teacher Vagueness and Use of Lecture Notes on Student Performance

Research on teaching effectiveness indicates that teacher clarity is an important variable. Rosenshine and Furst (1971, 1973) reported that the most consistent link between a teacher behavior (process) and student achievement (product) was teacher clarity. Recent research, such as that of Murray (1983), further strengthens the importance of teacher clarity as a component of effective instruction. Land and Smith (1979) differentiated between high-inference teacher clarity variables (which are open to subjectivity) and low-inference teacher clarity variables (which can be observed and objectively quantified). One low-inference teacher clarity variable studied by Land and Smith is referred to as teacher use of vagueness terms.

Vagueness Terms

Hiller (1968) presented evidence that vagueness occurs as a teacher commits himself or herself to deliver information he or she can't remember or never really knew. Hiller, Fisher, and Kaess (1969) defined vagueness to be "a psychological construct which refers to the state of mind of a performer who does not sufficiently command the facts or the understanding required for maximally effective communication" (p. 670). Hiller et al. defined vagueness terms according to the following nine categories of imprecision (examples are included in parentheses): (1) ambiguous designation (somehow, ether, thing),

(2) approximation (almost, mostly, nearly), (3) "Bluffing" and recovery (actually, you know, of course), (4) error admission (excuse me, I guess), (5) indeterminate quantification (a bunch, a couple, some), (6) multiplicity (aspects, sorts, kinds), (7) negated intensifiers (not all, not many), (8) possibility (may, might, chances are), and (9) probability (ordinarily, sometimes, probably). In correlational research by Hiller et al. (1969), Smith (1977), Dunkin (1978), and Dunkin and Doenau (1980), negative correlations between teacher use of vagueness terms and student achievement were reported. Smith and Land (1981) reviewed ten studies that reported a causal relationship between vagueness terms and achievement. In all studies reviewed, teacher use of vagueness terms negatively affected student learning. However, in all such studies of teacher vagueness, frequencies of vagueness terms were reported as totals across all nine categories of terms, rather than as subtotals to indicate occurrences in each of the distinct nine groups. For example, Hiller et al. (1969) reported that the large number of vagueness terms identified in their study (more than 200) precluded testing individual vagueness categories for significance. In an initial attempt to identify vagueness categories that have the greatest effect on achievement, the present study investigated the bluffing and recovery category separate from the six categories of ambiguous designation, approximation, indeterminate quantification, multiplicity, possiblility, and probability. These six categories are referred to in the present study as "teacher uncertainty." Strunk and White (1979) noted that such statements of

uncertainty sound irresolute and referred to such phrases as "the leeches that infest the pond of prose, sucking the blood of words" (p. 73).

The vagueness categories of error admission and negated intensifiers were not examined in this research. The rationale for investigating the bluffing and recovery category of vagueness terms separately is that bluffing and recovery terms are more representative of superfluous or "filler" phrases or phrases of opinion than they are an overt display of uncertainty. Strunk and White (1979) advised that effective communication is concise, containing no superfluous phrases. They also suggested that opinions "may not be relevant to the discussion. Opinions scattered indiscriminately about leave the mark of egotism" (p. 80).

Lecture Notes Handouts

Smith (1982) reported attempts to train teachers to teach more clearly, and suggested that handouts of lecture notes may reduce the negative effect of teacher use of vagueness terms on student comprehension. Collingwood and Hughes (1978) indicated that students perform better when they are given some form of lecture note handout. Annis (1981) indicated that a partial outline of the lecture with only the major points supplied was a more effective format for a handout than other forms of handout, such as a full copy of the lecturer's notes or student's personal notes. In the present study, the use of lecture notes handouts with the major points supplied was investigated.

Student Perception

Those who question the value of student evaluations of instruction suggest that the student lacks the perspective to assess instructional effectiveness. However, studies by Frey (1973), Marsh, Fleiner and Thomas (1975), Braskamp, Caulley, and Costin (1979), and Marsh and Overall (1980) revealed that, when different instructors of the same course gave a common final examination, the sections who gave high (low) ratings to their instructors most frequently made high (low) examination scores. Smith and Land (1980) reported that students' perceptions of lesson effectiveness were found to be low (high) if the teacher used a high (low) degree of vagueness terms.

The present study investigates the combined effects of teacher bluffing and recovery, uncertainty, and use of lecture notes handouts on student achievement and student perception.

METHOD

Subjects

Subjects were 160 students who were enrolled in high school social studies classes in Richmond County and Columbia County (Georgia) public schools. Six high schools participated in the experiment. The students participated by virtue of their teachers' willingness to release them from regularly scheduled class time for 1 hour on each of two days. Each student was assigned to one of eight groups (n = 20 each), which were defined by the possible combinations of two bluffing and recovery conditions (bluffing, no bluffing),

two uncertainty conditions (uncertainty, no uncertainty), and two notes handouts conditions (notes, no notes).

Procedure

Since students were drawn from six high schools, it was not feasible to randomly assign students to the eight groups. In an attempt to equate the groups in terms of ability, a 10 minute tape recorded lesson on the Baltic States, based on an article in the Atlantic Monthly (Atwood, 1980), was presented to over 200 students in their regularly scheduled social studies classrooms. After the lesson, the students were administered a 16-item test on the historical, geographic, and demographic characteristics of the Baltic States. The reliability of this test, based on the Kuder-Richardson formula 20, was .78. A matching process based on the Baltic States test scores then was used to assign students to the eight groups. Students who made the same score on the Baltic States test were separated into groups of eight, and then each student in each group of eight was assigned to one of the eight treatment groups. In this way, the Baltic States mean test scores were the same for all eight treatment groups ($\bar{X}$ = 10.7 out of a possible 16 points). Therefore, from a pool of over 200 students, 160 students were assigned to eight groups in such a way that it can be assumed that the groups were equal in terms of ability to comprehend social studies material presented in tape recorded lessons.

One week after the Baltic States presentation, each of the eight groups was presented a 12 minute tape recorded lesson based on an

article in the Atlantic Monthly (Dippel, 1978), which focused on the history, geography, and economy of Botswana. A transparency of a map of South Africa that indicated Botswana's location was shown during the lesson presentations. To effect maximum control over teacher behavior variables, the lessons were scripted and taped by the same instructor. The only difference in the eight lessons was the presence or absence of bluffing phrases, uncertainty phrases, and lecture notes handouts.

The recorded lessons were essential to produce desired levels of bluffing and uncertainty phrases. Such a technique is not as natural as "live" lessons, but Taveggia (1974) reviewed research that indicated no significant difference between achievement of students instructed face-to-face and achievement of students presented recorded lessons. The lessons were constructed to represent natural instruction and it is reasonable to assume that the results of this study can be generalized to most secondary school history classrooms.

Student comprehension of the lessons was determined by administering a 20-item test immediately after each lesson was completed. Students were not allowed to use notes handouts or personal notes during the test. The Kuder-Richardson 20 test reliability was .74.

After the students completed the test, they were administered an 11-item lesson evaluation (Table 1). This cluster of items was reported by Smith and Land (1980) to be related to teacher clarity, and it was hypothesized that the use of bluffing phrases, uncertainty phrases, and lecture notes handouts would be reflected in student ratings

of these items.

- - - - - - - - - - - - - -
Insert Table 1 about here
- - - - - - - - - - - - - -

Four of the eight lessons contained a high degree of bluffing phrases (40 phrases) and four lessons contained no bluffing phrases. Four of the lessons contained a high degree of uncertainty phrases (40 phrases) and four lessons contained no uncertainty phrases.

The following excerpt is from the lessons containing no bluffing phrases and no uncertainty phrases.

"This lesson is on the country of Botswana, a country in South Africa. Listen carefully and take notes because you will be tested over the material covered. Botswana is a flat, dry country the size of France. The western portion of Botswana is desert. Botswana is surrounded on the west by Namibia, on the east by Rhodesia, on the north by Zambia and Angola, and on the south by South Africa.

Botswana gained its independence in 1966 and has been one of only five countries on the African continent to have a democratic government. The president of Botswana was educated in England. The president gains respect from the people of Botswana, because he originally was a chief of the largest of the eight major tribes of Botswana. Critics of the president claim that he serves the rich Botswana farmers more than he serves the poor people."

The following excerpt is from the lessons containing bluffing phrases but not uncertainty phrases. The bluffing phrases are italicized.

"This lesson is on the country of Botswana, a country in South

Africa. Listen carefully, you know, and take notes because you will be tested over the material covered. Botswana is a flat, dry country, so to speak, the size of France. The Western portion of Botswana is desert. Botswana is surrounded on the west by Namibia, on the east by Rhodesia, on the north by Zambia and Angola, and on the south by South Africa.

Anyway, Botswana gained its independence in 1966 and has been one of the only five countries on the African continent to have a democratic government. The president of Botswana was educated in England. Of course, the president gains respect from the people of Botswana, because he originally was a chief of the largest of the eight major tribes of Botswana. Frankly, critics of the president claim that he serves the rich Botswana ranchers more than he serves the poor people."

The following excerpt is from the lessons containing uncertainty phrases, but no bluffing phrases. Uncertainty phrases are italicized.

"This lesson is on the country of Botswana, a country in South Africa. Listen somewhat carefully and take notes because you will be tested over the material covered. Botswana is a flat, dry country the size of France. The Western portion of Botswana is desert. Botswana is surrounded on the west by Namibia, on the east by Rhodesia, on the north by Zambia and Angola, and on the south by South Africa.

Botswana gained its independence in 1966 and has been one of the only five countries on the African continent to generally have a democratic government. The president of Botswana was educated somewhere in England. The president probably gains respect from the people of

Botswana, because he originally was a chief of the largest of the eight major tribes of Botswana. Critics of the president claim that he serves the rich Botswana ranchers a lot more than he serves the poor people."

Four lessons were accompanied by lecture notes handouts and four lessons involved no handouts. The lecture notes summarized the main ideas of the lesson and were organized to coincide with the sequence of material in the recorded lessons. All 20 of the test questions could be answered by listening to the lessons. Ten of the 20 test questions could be answered by reading the notes handouts. Students in all treatment groups were encouraged to take personal notes as they listened to the lesson.

The lessons containing a combination of bluffing phrases and uncertainty phrases were constructed by including all bluffing phrases and all uncertainty phrases from the other lessons. As previously stated, all eight lessons were precisely the same, except for variations in bluffing phrases, uncertainty phrases, and use of lecture notes handouts. Table 2 shows all bluffing phrases and uncertainty phrases used in the lessons, as well as the frequencies of occurrence for the phrases.

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Insert Table 2 about here
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RESULTS

A 2(uncertainty vs. no uncertainty) X 2(bluffing vs. no bluffing) X 2(notes handout vs. no notes handout) analysis of variance was performed on the student achievement scores as well as on the scores

for each of the 11 lesson evaluation items. The means and standard deviations for all 12 dependent variables are shown for each of the eight experimental conditions in Table 3. Table 4 presents the F ratios for each of the 2 X 2 X 2 ANOVAs.

The uncertainty condition significantly reduced achievement scores, as did the no notes condition. There was no significant main effect due to the bluffing condition. There were no significant interactions for achievement as the dependent variable.

The main effect due to notes handouts was significant for lesson evaluation response Item c ("explains fully"), Item e ("well prepared"), Item g ("well organized"), and Item h ("speech easy to understand"). In all four cases, the no notes condition produced higher lesson evaluation scores than did the notes condition. There were no other significant main effects or significant interactions for lesson evaluation items as dependent variables.

Values of omega squared (see Table 4) indicate that 4% of the variance in achievement was accounted for by uncertainty and by the notes condition. No variable accounted for more than 6% of the variance in any of the lesson evaluation scores.

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Insert Tables 3 and 4 about here
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DISCUSSION

It is necessary to bear five cautions in mind when interpreting these results. First, the lessons were only 12 minutes in length, and may not be indicative of results over longer periods of time. Second, the posttest measured only short-term retention, and did not have high reliability (.74). Third, the Botswana lesson content was

difficult, as evidenced by the overall posttest average of only 9.5 points. Fourth, although students in groups were matched in terms of ability based on the Baltic States test, students were not randomly assigned to groups. Finally, although six F ratios indicated results significant beyond the .05 level, values of omega squared indicated that the variables studied contributed to only small amounts of the variability in achievement and student perception. With these cautions in mind, the following conclusions are made. The results of this study indicate a cause-and-effect relation between teacher use of uncertainty phrases and student achievement. Such phrases negatively affected achievement, although they did not affect student perception significantly. The results also support previous research in that notes handouts had a positive effect on achievement. Unexpectedly, teacher use of bluffing phrases did not significantly affect achievement or student perception of lesson effectiveness. This is the first study known of by this researcher in which categories of vagueness terms were studied separately rather than as a cluster. Further research on the differential effects of categories of vagueness terms on achievement and perception is warranted. Another unexpected result is that, while notes handouts positively affected achievement, students rated lessons significantly lower on four of the lesson evaluation items when they received lecture notes handouts. One possible explanation for this may be that students preferred a different format for their notes (such as full notes or personal notes). Annis (1981) reported a similar finding in that students retained their preference

for notes format regardless of how well they achieved with other notes formats. Thus, the results of this study indicate that, while student evaluations of lesson effectiveness may be of value, such evaluations are not necessarily powerful predictors of achievement.

The most relevant suggestion for teacher training and teacher evaluation is that low-inference indicators of teacher effectiveness be identified and that training and evaluation focus on these particular indicators. Student outcomes, both in achievement and in perception of lesson effectiveness, should be integral parts of the training and evaluation process, although care should be exercised in relating perception to achievement.

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Table 1. - Lesson Evaluation Form

What did you think of the teaching?						
a. precise	5	4	3	2	1	imprecise
b. decisive	5	4	3	2	1	indecisive
c. explains fully	5	4	3	2	1	does not explain fully
d. coherent	5	4	3	2	1	incoherent
e. well prepared	5	4	3	2	1	not well prepared
f. confident	5	4	3	2	1	not confident
g. well organized	5	4	3	2	1	not well organized
h. speech easy to understand	5	4	3	2	1	speech not easy to understand
i. speech soothing	5	4	3	2	1	speech irritating
j. very clear lesson	5	4	3	2	1	lesson not clear at all
k. clear and understandable explanations	5	4	3	2	1	confusing explanations

Table 2. - Bluffing and Uncertainty Phrases in Lessons

Bluffing and Recovery Phrases	Uncertainty Phrases	
Actually (2)	Ambiguous Designation	Possibility
And so forth (2)	Somehow (2)	May (1)
And so on (3)	Someplace (1)	Maybe (1)
Anyway (2)	Somewhere (1)	Might (1)
As you know (3)	Thing (1)	Perhaps (2)
Clearly (2)	Approximation	Possibly (1)
Frankly (3)	Fairly (2)	Seems (1)
In a nutshell (1)	Fairly much (1)	Probability
In essence (2)	Mostly (1)	Frequently (1)
In fact (2)	Pretty much (2)	Generally (2)
In other words (2)	Somewhat (1)	Normally (1)
Obviously (3)	Sort of (2)	Often (1)
Of course (4)	Indeterminate Quantification	Probably (1)
So to speak (2)	A bunch (1)	Sometimes (1)
To make a long story short (1)	A few (1)	Usually (1)
To tell the truth (1)	A little (2)	Total: 40
You know (3)	A lot (1)	
You see (2)	Some (1)	
Total: 49	Various (1)	
	Multiplicity	
	Types of (2)	
	Sorts of (1)	
	Aspects (1)	

Table 3. - Group Means and Standard Deviations

Uncertainty		No	No	No	Yes	No	Yes	Yes	Yes	
Bluffing		No	No	Yes	No	Yes	No	Yes	Yes	
Notes Handouts		No	Yes	No	No	Yes	Yes	No	Yes	Totals
Achievement Scores		9.35 (3.03)	11.45 (2.26)	8.90 (2.34)	8.20 (3.96)	11.15 (3.66)	9.05 (3.93)	8.95 (2.54)	9.15 (3.57)	9.52 (3.12)
Response Item	a.	3.35 (1.14)	3.30 (1.03)	3.05 (0.89)	3.60 (1.27)	3.00 (1.12)	3.40 (0.99)	3.50 (1.00)	3.20 (1.24)	3.30 (1.09)
	b.	3.20 (1.15)	3.30 (0.98)	3.35 (0.99)	3.30 (1.22)	2.90 (1.02)	3.40 (1.27)	3.45 (0.89)	3.20 (1.15)	3.26 (1.08)
	c.	3.70 (1.08)	3.50 (1.43)	3.80 (0.89)	4.00 (1.08)	3.25 (1.29)	3.20 (1.20)	3.55 (1.23)	3.55 (1.36)	3.51 (1.22)
	d.	3.10 (0.97)	3.05 (1.00)	3.30 (0.80)	3.45 (1.15)	3.30 (1.22)	3.10 (1.12)	3.45 (0.69)	3.00 (1.12)	3.22 (1.01)
	e.	3.55 (1.15)	3.35 (1.04)	3.60 (0.94)	4.00 (1.12)	3.35 (1.04)	3.40 (1.31)	3.90 (0.97)	3.45 (1.36)	3.59 (1.12)
	f.	3.55 (1.09)	3.65 (1.14)	3.20 (0.83)	3.30 (0.86)	3.35 (1.18)	3.20 (1.06)	3.45 (1.10)	3.20 (1.20)	3.36 (1.06)
	g.	3.55 (1.32)	3.35 (1.31)	3.50 (1.05)	3.95 (1.05)	3.40 (1.50)	3.65 (1.23)	4.05 (0.89)	2.85 (1.27)	3.54 (1.24)
	h.	3.50 (1.28)	3.45 (1.36)	3.70 (1.08)	3.75 (0.97)	3.45 (1.47)	3.15 (1.18)	4.10 (1.07)	3.05 (1.23)	3.52 (1.23)
	i.	2.95 (1.05)	3.05 (1.50)	3.35 (1.23)	3.40 (1.05)	2.95 (1.36)	2.95 (1.36)	3.30 (1.38)	2.75 (1.60)	3.09 (1.32)
	j.	3.40 (1.27)	3.35 (1.18)	3.50 (1.05)	3.35 (1.23)	2.95 (1.10)	3.00 (1.41)	3.55 (1.00)	3.15 (1.50)	3.28 (1.22)
	k.	3.15 (1.27)	3.05 (1.43)	3.10 (0.72)	3.60 (1.14)	3.15 (1.39)	3.20 (1.32)	3.60 (1.27)	3.10 (1.17)	3.24 (1.22)

Note: Figures in parentheses are the standard deviations.

Table 4. F Ratios of ANOVAs

Variable		Uncertainty (A)	ω_A^2	Bluffing (B)	Notes (C)	ω_C^2	AxB	AxC	BxC	AxBxC
Achievement Scores		8.43**	.04	<1	8.13**	.04	<1	3.04	<1	<1
Response Item	a.	2.10		1.70	<1		<1	<1	<1	<1
	b.	<1		<1	<1		<1	<1	1.71	<1
	c.	<1		<1	7.20**	.04	<1	<1	<1	<1
	d.	<1		<1	1.71		<1	1.35	<1	<1
	e.	1.60		<1	4.43*	.02	<1	<1	<1	<1
	f.	<1		<1	<1		1.39	<1	<1	<1
	g.	<1		<1	5.47*	.03	1.51	3.11	1.08	1.01
	h.	<1		<1	6.46*	.03	<1	3.11	<1	<1
	i.	<1		<1	2.40		<1	<1	<1	<1
	j.	<1		<1	3.01		<1	<1	<1	<1
	k.	1.81		<1	1.48		<1	1.20	<1	<1

* $p < .05$

** $p < .01$